

Climate Analytics

Submission to Climate Change Authority: Updating Advice on Meeting the Paris Agreement

August 2019

This submission evaluates the need for the Climate Change Authority (CCA) to update its advice on what is necessary for Australia to meet its Paris Agreement obligations, in reaction to the consultation paper published by the CCA in July 2019.

The Paris Agreement commits countries to work together to hold global warming well below 2°C and pursue efforts to limit warming to 1.5°C¹: in shorthand - a 1.5° warming limit. To achieve this temperature goal, the Agreement specifies that global greenhouse gas emissions are to reach net zero in the second half of the century, with global emissions peaking as soon as possible and declining rapidly thereafter². The timing of when net zero emissions are to be achieved globally is to be determined in accordance with best available science so as to be consistent with achieving the Agreement’s long-term temperature goal.

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- 1 Article 2 of the Paris Agreement defines its long-term temperature goal as “Holding the increase in the global average temperature to well below 2oC above pre-industrial levels and pursuing efforts to limit the temperature increase to 1.5oC above pre-industrial levels, recognizing that this would significantly reduce the risks and impacts of climate change”
 - 2 Article 4 of the Paris Agreement “In order to achieve the long-term temperature goal set out in Article 2, Parties aim to reach a global peaking as soon as possible ..., and to undertake rapid reductions thereafter in accordance with best available science, so as to achieve a balance between anthropogenic emissions by sources and removals by sinks of [GHGs] in the second half of this century”.

Global emission reductions needed

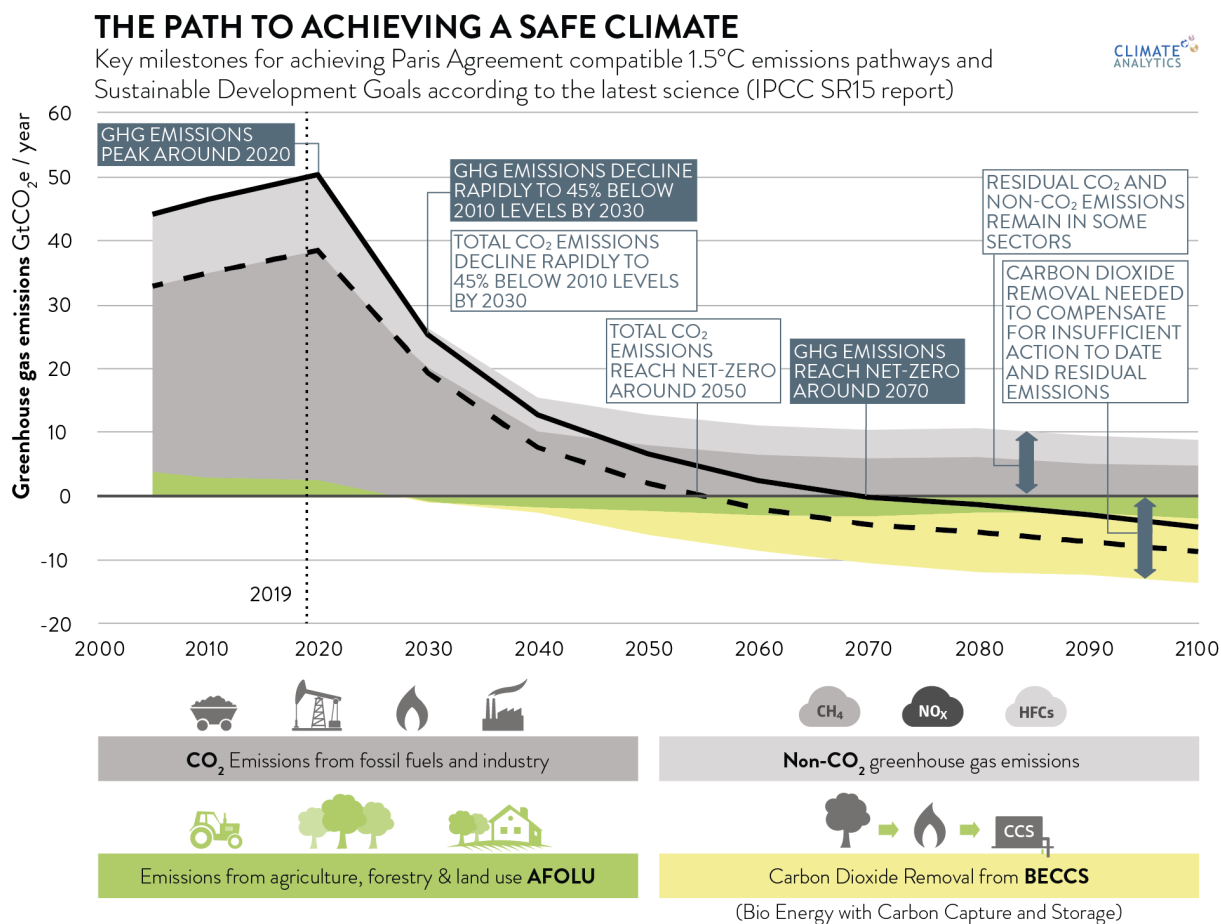


Figure 1 - Overview of 1.5°C Paris Agreement compatible pathways reviewed in the IPCC 1.5°C Special Report showing key global benchmarks. Source: Climate Analytics (2019): “Insights from the IPCC Special Report on 1.5°C for preparation of long-term strategies” https://climateanalytics.org/media/climateanalytics_ipcc-1.5-leds_report_april_2019.pdf

In order to evaluate the emission reduction contribution for Australia to be consistent with the Paris Agreement, it is important to have an overview of the global emission reductions pathway needed. As requested by UNFCCC at Paris in 2015 the IPCC completed a Special Report on 1.5°C³ in October 2018, including an evaluation of greenhouse gas emissions pathways consistent with this limit. In evaluating 1.5°C Paris Agreement compatible pathways the IPCC focused on mitigation scenarios that entailed no or low (<0.1°C) overshoot above 1.5°C, having a peak 21st century warming below 1.6°C, and that limited warming to 1.5°C or below by 2100. Key global benchmarks in terms of CO₂ emissions and total greenhouse gas reductions are shown in the figure above.

Globally, both CO₂ and GHG emissions need to be about 45% below 2010 levels by 2030, with CO₂ reaching zero around 2050 and total greenhouse gas emissions reaching net zero around 2070⁴. In order to meet the Paris Agreement 1.5° limit, it can also be seen that negative CO₂ emissions may be needed at scale. The need for this technology can be reduced significantly by bringing forward the time at which CO₂ emissions reach zero globally, and also increasing the level of reductions of other greenhouse gases. In effect, this means the earlier that fossil fuel emissions are phased out, the faster renewable energy is phased in and the higher the level of efficiency achieved in energy use, transport, industry and agricultural, the lower will be the need for negative CO₂ emissions technology.

3 <https://www.ipcc.ch/sr15/>

4 https://climateanalytics.org/media/climateanalytics_ipcc-1.5-leds_report_april_2019.pdf

The requirement for deep carbon dioxide reductions and zero emissions means, whatever other arguments are important, that all emitters - both large and small - will need to take part.

The IPCC report also finds that current NDCs communicated under the Paris Agreement are not consistent with limiting warming to 1.5°C. Instead, the collective level of ambition implied by the current set of NDCs would raise emissions to 52-58 GtCO₂eq by 2030, far above the 25-30 GtCO₂eq required to achieve the 1.5°C limit.

What does Australia need to do to meet the Paris Agreement?

In order to meet the Paris agreements commitments Australia needs to make both domestic emission reductions and contributions to assisting poorer countries in order to move the Paris Agreement in reducing theirs. In a briefing published in May this year⁵ we have analysed the range of targets proposed by political parties in advance of the May election, and compared this with the range proposed by the CCA in 2014, as well as with the fair share contribution range based on the Climate Action Tracker⁶, and an estimate for a domestic emissions range consistent with least cost pathways for Australia consistent with global integrated assessment and energy model scenarios⁷. Given recent and ongoing reductions in renewable energy costs and storage, ongoing reductions in electric vehicle costs and other technological developments these emission reductions may indeed be conservative.

In addition to Australia's own domestic emission reductions, Australia, and other wealthier countries, also needs to make a contribution to assisting poorer countries and reduce their emissions, which gives rise to what is called a "fair share" contribution to global emission reductions. For wealthier countries such as Australia this almost always means that a fair share contribution (measured in terms of national emission reduction targets) is larger than least-cost domestic emission reductions.

Based on the analysis published in the briefing, a Paris Agreement-compatible 2030 domestic emissions reduction commitment target for Australia would be in the range of a 44-61% emissions reduction by 2030 below 2005 levels, including land use change and forestry sources (LULUCF). Excluding LULUCF, a Paris Agreement-compatible domestic emissions reduction commitment target would be in the range of a 35-55% reduction by 2030 from 2005 levels - excluding LULUCF. There is a large range of least cost domestic emission reductions for Australia deriving from Paris Agreement global emission pathways due in part to the range of model results in the scientific literature.

If Australia's Paris Agreement 2030 NDC were to be expressed as a fair share target and be consistent with the range of scientific assessments, it would be in the range of a 55-87% reduction below 2005 levels⁸, including land use change and forestry sources (48-85% reduction below 2005 emission levels, excluding LULUCF). A fair share target represents a country's contribution to meeting the Paris Agreement globally, which includes domestic emission reductions plus contributions to reductions elsewhere, and the NDC goal. There is a large range because of the wide range of fairness viewpoints in the scientific literature, with the range here drawn from the Climate Action Tracker⁹.

⁵ https://climateanalytics.org/media/ca_-_australian_political_party_positions_and_the_paris_agreement_-_2019.05.10_1.pdf

⁶ <https://climateactiontracker.org/methodology/comparability-of-effort/>

⁷ The pathway is derived from results from IAMs (Integrated Assessment Models) results under RCP 1.9 scenarios of Rogelj, J., Popp, A., Calvin, K. V., Luderer, G., Emmerling, J., Gernaat, D., ... Tavoni, M. (2018). Scenarios towards limiting global mean temperature increase below 1.5 °C. Nature Climate Change, 1. Link: <https://doi.org/10.1038/s41558-018-0091-3> and methods of Sferra, F., Krapp, M., Roming, N., Schaeffer, M., Malik, A., & Hare, W. (2018). Towards optimal 1.5° and 2°C emission pathways for individual countries: a Finland case study. Energy Policy – Accepted. Since publication of IPCC's Special Report on 1.5°C, work is ongoing at Climate Analytics and other institutions to evaluate 1.5°C pathways in terms of plausibility related to e.g. global negative emissions in both energy and land sectors, current mitigation policies and recent technological and economic developments. Specific updates regarding these dimensions, incl. specific for Australia, will narrow the range in the numbers for Paris-Agreement compatible pathways provided in this brief.

⁸ <https://climateactiontracker.org/countries/australia/> The higher limit (55%) is the boundary between 1.5°C Paris Agreement Compatible and 2°C Compatible and the lower limit (87%) the bottom of fair share range between Role Model and 1.5°C Paris Agreement Compatible.

⁹ <https://climateactiontracker.org/methodology/comparability-of-effort/>

Australia is not on track to achieve its insufficient NDC target

According to the December 2018 Morrison government projections, greenhouse gas emissions will continue to increase until 2030, from about 12% below 2005 levels of emissions including forestry to about 7% below 2005 levels. Energy, industry transport and agricultural emissions are projected to be 7.6% above 2005 levels by 2030, rising from 6.1% above 2005 levels in 2018.

The Climate Solutions Package mainly relies on reducing the abatement task through the use of carry-over units, and on continuing a rebranded ERF (now Climate Solutions Fund). In addition, it includes unspecified Energy Efficiency Measures, government investment into a “Battery of a Nation” project (new links between Tasmania and mainland), and the vague announcement of a future Electric Vehicle Strategy. The Government claims these policies, along with energy performance (air con and refrigeration), and previous policies and projects such as Snowy 2.0, and unspecified “technology improvements”, will allow Australia to meet the 2030 target. The package does not clarify how it will meet the Paris commitments in detail. 100m tonnes of carbon abatement is derived from unspecified “technology improvements and other sources of abatement” and another 10m tonnes from the electric vehicle strategy which has not yet been developed.¹⁰

The use of carry-over units decreases level of ambition

The current Liberal-NP Coalition Government target of 26-28% emissions reduction target for 2030 below 2005 emissions levels (incl. LULUCF) as part of Australia’s NDC is far above a Paris Agreement-compatible reduction range. [The Climate Action Tracker rates¹¹](#) Australia’s Paris Agreement 2030 target “Insufficient”, which means it is not a fair contribution to the global effort, and is not consistent with the Paris Agreement’s 1.5°C limit, unless other countries make much deeper reductions and comparably greater effort.

However, the real LNP emissions reduction target that would result from their policies is much weaker, as the Government has stated it intends to “carry over” surplus emission units from the Kyoto Protocol towards its Paris Agreement target. This would significantly lower the actual emission reductions to 17-18% below 2005 levels by 2030.

The government's estimate of surplus “carry over” units, as contained in its December 2018 projections, would reduce the emissions reduction from 26% to 17.7% below 2005 levels by 2030. However, data found in National Inventory Reports submitted by Australia, as well as in Australia's Seventh National Communication, indicates that the surplus units the government may attempt to “carry over” to the Paris agreement target in 2030 may be a little higher than presently indicated. Depending upon whether the government attempts to count all potentially available units the resulting actual emissions reduction target could range between 17 - 18% below 2005 levels by 2030¹². See Figure 2 and 3.

¹⁰ <https://climateactiontracker.org/countries/australia/>

¹¹ <https://climateactiontracker.org/countries/australia/>

¹² https://climateanalytics.org/media/ca_-_australian_political_party_positions_and_the_paris_agreement_-_2019.05.10_1.pdf

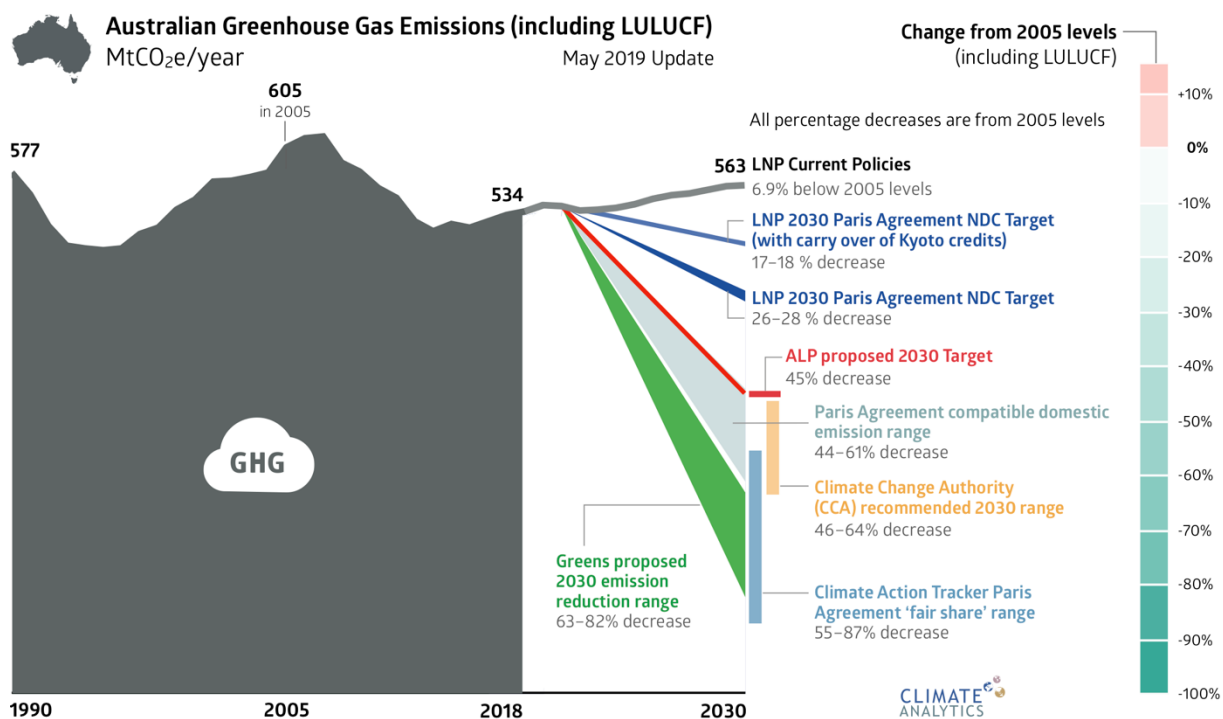


Figure 2 Schematic overview of national emission targets proposed by political parties in the 2019 Australian Federal election compared to Paris Agreement compatible domestic emission pathways, Climate Action Tracker estimated fair share emission reduction ranges, and the 2014 recommended 2030 range of the climate change authority. This figure shows the emission reductions with respect to emissions **including** land use, land use change and forestry. Source: Climate Analytics (2019): https://climateanalytics.org/media/ca_-_australian_political_party_positions_and_the_paris_agreement_-_2019.05.10_1.pdf

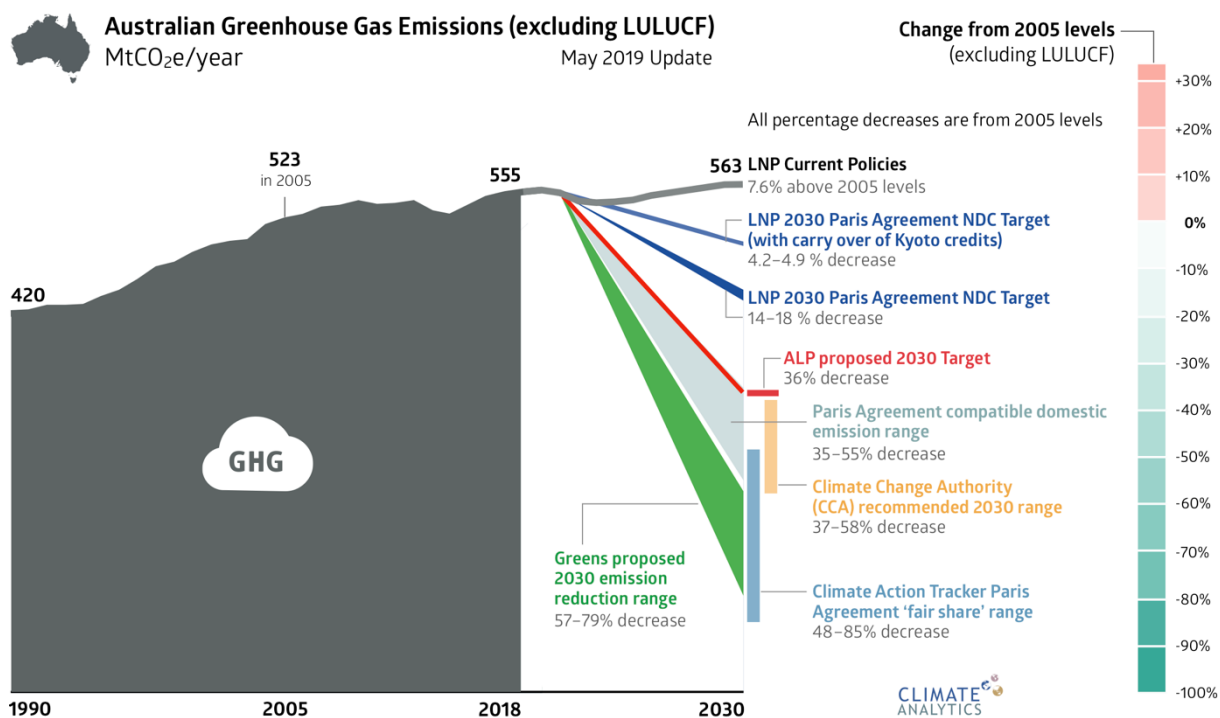


Figure 3 Schematic overview of national emission targets proposed by political parties in the 2019 Australian Federal election compared to Paris Agreement compatible domestic emission pathways, Climate Action Tracker estimated fair share emission reduction ranges, and the 2015 recommended 2030 range of the climate change authority. This figure shows the emission reductions excluding land use, land use change and forestry. Source: Climate Analytics (2019): https://climateanalytics.org/media/ca_-_australian_political_party_positions_and_the_paris_agreement_-_2019.05.10_1.pdf

Australia needs to update its NDC by 2020 and raise its level of ambition

The CCA, in its consultation paper¹³, refers to the Paris Agreement five-year “review, refine, and ratchet” mechanism. It states that Australia will “need to submit a more ambitious post-2030 goal in 2025”. Indeed, parties agreed to individually contribute their “highest possible mitigation ambition” and build momentum through successive improvements of effort, by communicating new or updated Nationally Determined Contributions (NDCs) every five years. However, The Paris outcome (decision 1/CP.21) calls upon Parties to communicate new or updated NDCs by 2020 with time frames up to 2030. Parties agreed in Paris to submit to the UNFCCC Secretariat their updated NDCs at least 9 to 12 months in advance of relevant session of the CMA (decision 1/CP.21, para 25), which for 2020 is CMA-3 at COP26 – this translates to a submission by February 2020 at the latest with COP26 scheduled to be held in November 2020¹⁴. Given the findings of the IPCC in its Special Report, that current NDCs communicated under the Paris Agreement are not consistent with limiting warming to 1.5°C, and the urgency to peak global emissions by 2020, Parties urgently need to raise the level of ambition of current NDCs by 2020. This also holds for Australia: Given Australia has an inadequate level of ambition, it needs to follow the call by the UN Secretary General¹⁵ to raise the level of ambition of its current NDC with higher emission reductions for 2030¹⁶.

¹³ <http://www.climatechangeauthority.gov.au/sites/prod.climatechangeauthority.gov.au/files/Consultation%20paper.pdf>

¹⁴ https://newclimate.org/wp-content/uploads/2019/06/10_Point_Agenda_For_Mitigation_Ambition.pdf https://newclimate.org/wp-content/uploads/2019/06/10_Point_Agenda_For_Mitigation_Ambition.pdf

¹⁵ <https://www.un.org/en/climatechange/un-climate-summit-2019.shtml>

¹⁶ https://www.climate-transparency.org/wp-content/uploads/2019/08/Australia_Ambition_Call.pdf

Australia's policies are inadequate to achieve the transformation needed

Australia's climate policies are inadequate compared to other countries, and are not suitable to achieve the necessary transformation across all sectors. We have analysed Australia's policies across all sectors and compared them with policies of other major emitters¹⁷. The OECD has referred to Australia's climate mitigation policies as "piecemeal approach"¹⁸. The OECD has also identified a large effective carbon pricing gap of 78%, that is the extent to which polluters do not pay for the damage from carbon emissions. Effective carbon pricing includes specific taxes on fuels and other energy use, carbon taxes and emissions trading. Globally, the 2018 gap was 76.5%¹⁹.

In an international comparison by the American Council for an Energy-Efficient Economy (ACEEE), Australia's overarching national commitment and leadership for energy efficiency policy across sectors has been scored poorly, ranking 18 out of 25. Australia only has an energy productivity target, but no overall savings goal, and no tax incentives for efficiency improvements²⁰. The IEA has also shown that Australia is the only out of 28 countries not making any progress in energy efficiency²¹.

The government wants to continue relying on the Emissions Reduction Fund as the core instrument, even though has been the subject of fiscal concern due to its cost to the taxpayer, and against the advice of Climate Change Authority to not rely on the ERF and instead introduce new policies aiming at decarbonisation and structural change (Climate Change Authority, 2017). The declining business interest in the instrument is a symptom of this deficiency. The fund is plagued by a mismatch of its abatement profile (concentrated in the land sector) with Australia's emissions profile, which is driven by industrial and power sectors, as well as the high risk of reversal of stored carbon in land sector projects being emitted again, and serious doubts about the additionality of many of the ERF projects²².

In addition, high-emitting industrial facilities covered by the safeguard mechanism are projected to drive national emissions growth through to 2030, as they are permitted to increase emissions baselines, leading to a projected increase of emissions from these facilities potentially cancelling out publicly funded emissions reductions under the ERF²³.

In the energy sector, Australia will fail to achieve the necessary transformation without a decision to phase out coal by 2030²⁴ and continuing to provide investment security through setting Renewable Energy targets beyond 2020 and supporting a transition to 100% renewable energy with further policies and grid development. While the recent growth rate of renewables in Australia's power sector has been high by world standards, despite the federal government not supporting this, it is also true that the penetration of renewable energy into Australia's total primary energy supply has not progressed rapidly and is relatively stagnant. This would need to change for Australia to meet the Paris agreement goals, and as a further major opportunity for the renewable industry²⁵.

In the transport sector, current lack of policies has led to Australia's combined vehicle fleet showing on of the highest emissions intensities, higher than the USA, China, India and other major

¹⁷ <https://climateanalytics.org/publications/2018/evaluating-australias-climate-and-policy-action/>

¹⁸ OECD. (2019). OECD Environmental Performance Reviews: Australia 2019. <https://doi.org/10.1787/9789264310452-en>

¹⁹ <https://climateanalytics.org/media/australiacimatefactsheets2018-australianeconomy-climateanalytics.pdf>

²⁰ <https://climateanalytics.org/media/australiacimatefactsheets2018-australianeconomy-climateanalytics.pdf>

²¹ OECD/International Energy Agency. (2017). Energy Efficiency 2017 - Report Series. 143. <https://doi.org/10.1787/9789264284234-en>

²² <https://climateactiontracker.org/countries/australia/current-policy-projections/>

²³ <https://climateactiontracker.org/countries/australia/current-policy-projections/>

²⁴ <https://climateanalytics.org/media/australiacimatefactsheets2018-electricitysector-climateanalytics.pdf>, Climate Analytics (2016). Implications of the Paris Agreement for coal use in the power sector. Link: https://climateanalytics.org/media/climateanalytics-coalreport_nov2016_1.pdf

²⁵ https://climateanalytics.org/media/fact_check_anu_11feb2019.pdf

economies²⁶. Australia needs to urgently introduce fuel efficiency or carbon emissions standards both for light vehicles (with nearly 80% of new light duty vehicles sold globally subject to some kind of emissions or fuel economy standard) as well as heavy duty vehicles (as already introduced by Canada, China, Japan, the United States, and recently introduced by the European Union). Australia should also have a strategy to phase out internal combustion cars and aim for 100% sales of zero emissions cars by 2035 the latest, following other examples such as Norway (goal of zero emissions vehicles by 2025), and develop a strategy to fully decarbonise passenger and freight transport on land by 2050, including through electrification (both electric and green hydrogen powered fuel-cell vehicles (including trucks) and 100% renewable energy power. Australia's current national uptake rate for new electric vehicles is only 0.1%, compared to 3.8% at the global level²⁷.

For the industry sector²⁸, Australia needs to catch up with other comparable countries regarding effective policies for energy efficiency: The ACEEE scored Australia 22nd out of 25 in terms of energy efficiency for the industry sector, and Australia is one of the few countries falling behind instead of making progress with overall economy efficiency improvement and energy productivity of the manufacturing sector²⁹. Australia has no policy to encourage Energy management systems (EnMS) and only a very limited number of facilities have the ISO 50001 standard. Unlike the EU, China, Japan, India and other countries, Australia does not require industrial facilities to conduct regular energy audits. The voluntary 2006 Energy Efficiency Opportunities Act was abandoned in 2014. Mandatory energy audits are an important policy tool that requires obligated parties to undertake energy audits. Energy audits can help businesses identify opportunities to improve energy efficiency, benchmark improvements, and identify negative trends³⁰.

With a rapid increase in production of liquified natural gas (LNG) for export, LNG processing is one of the fastest-growing sources of emissions. Increasing gas extraction is also leading to more fugitive emissions. Direct combustion emissions are increasing and projected to increase further with the ramping up of LNG export facilities, mainly in Western Australia and Queensland. The increase in gas production is a major cause of the increase in overall emissions, and is also leading to an increase in fugitive emissions, with questions regarding the emissions reporting leading to concerns that emissions might be higher than presently reported³¹.

²⁶ <https://climateanalytics.org/media/australiacimatefactsheets2019-transportsector-climateanalytics.pdf>

²⁷ https://www.climate-transparency.org/wp-content/uploads/2019/08/Australia_Ambition_Call.pdf

²⁸ <https://climateanalytics.org/media/australiacimatefactsheets2018-industry-climateanalytics.pdf>

²⁹ <https://climateanalytics.org/media/australiacimatefactsheets2018-industry-climateanalytics.pdf>

³⁰ <https://climateanalytics.org/media/australiacimatefactsheets2018-industry-climateanalytics.pdf>

³¹ <https://climateanalytics.org/media/climateanalytics-report-westernaustraliasgasmble-2018.pdf>